



POSTER PRESENTATION

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# Patients with non-relapsing ANCA-associated vasculitis have increased numbers of circulating IL-10 producing Th17 cells

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## Introduction/aim

IL-17 producing T-cells (Th17) were recently defined as a new, pro-inflammatory T-cell subset and are considered to have a key role in autoimmune diseases.

Importantly, it was recently described that anti-inflammatory regulatory T-cells (Treg) are able to convert to pro-inflammatory Th17 cells ("Plasticity") and vice versa. Little is known about the Th17 response or plasticity in ANCA-associated vasculitis (AAV). Therefore, we investigated Th17 responses in AAV.

## Patients and methods

47 patients with ANCA-associated vasculitis and 12 age-matched healthy controls (HC) were studied. PBMC were isolated by ficoll gradient centrifugation and stimulated for 4 hours with phorbol-myristate-acetate/ionomycin in presence of brefeldin A. Intracellular staining was performed to detect IFN $\gamma$ , IL-4, IL-10 and IL-17A producing T-helper-cells by flow cytometry. Ten renal biopsies with necrotizing-crescentic-glomerulonephritis (NCGN) were stained for IL-17 by immunohistochemistry.

## Results

AAV patients in remission (n=27) and with active disease (n=20) had increased numbers of circulating IL-17A<sup>+</sup> T-helper-cells as compared to HC ( $2.04 \pm 1.65\%$  vs.  $0.73 \pm 0.36\%$ ,  $p < 0.0005$  and  $1.85 \pm 2.15\%$  vs.  $0.73 \pm 0.36\%$ ,  $p = 0.05$ ). Lesional IL-17<sup>+</sup> cells were present in renal biopsies with necrotizing crescentic glomerulonephritis (NCGN). Moreover, IL-10<sup>+</sup>/IL-17<sup>+</sup> T-helper-cells were found both in HC and AAV patients. However, AAV patients showed higher numbers of IL-10<sup>+</sup>/IL-17<sup>+</sup>

T-helper-cells than HC ( $0.054 \pm 0.048\%$  vs.  $0.025 \pm 0.014\%$ ,  $p < 0.05$ ). Furthermore, patients with non-relapsing disease course had significantly more IL-10 producing cells Th17 cells than patients with relapsing disease course ( $0.063 \pm 0.039\%$  vs.  $0.041 \pm 0.056\%$ ,  $p < 0.05$ ).

## Conclusion

The results of this study emphasize the importance of circulating and lesional Th17 cells in AAV. IL-17<sup>+</sup> cells participate in renal inflammation related to AAV. Elevated numbers of IL-10 producing Th17-cells are demonstrated for the first time in AAV and might point at enhanced plasticity. Further efforts are needed to unravel the role of Th17 cells in AAV.

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